The effects of financial vulnerability and mothers' emotional distress on child social, emotional and behavioural wellbeing: a structural equation model

The effects of financial vulnerability and mothers' emotional distress on child social, emotional and behavioural wellbeing: a structural equation model

Abstract:

This paper aims to understand the pathways through which financial vulnerability affects children's social, emotional and behavioural (SEB) wellbeing and whether that impact is directly experienced or, as hypothesised, indirectly through their mothers' emotional wellbeing. It uses data from Growing Up in Scotland - a longitudinal birth cohort study of 5,217 children born in 2004-5. The results show that maternal emotional distress is strongly associated with financial vulnerability, more so than with income, and that child SEB wellbeing is negatively associated with financial vulnerability and maternal emotional distress, with two-thirds of the effect of financial vulnerability being experienced indirectly through maternal emotional distress. While the qualitative evidence shows that financial vulnerability adversely affects older children directly, through the comparisons they make to their reference group, the quantitative finding is that young children are also negatively affected but predominantly via the effect of financial vulnerability on their mothers' emotional distress.

Keywords: children; financial vulnerability; income; maternal emotional distress; poverty; quantitative methods; Scotland; social, emotional and behavioural (SEB) wellbeing; structural equation modelling (SEM); UK.

The effects of financial vulnerability and mothers' emotional distress on child social, emotional and behavioural wellbeing: a structural equation model

Background

Runciman (1966: 9), in the theory of relative deprivation, posited that *'people's attitudes, aspirations and grievances largely depend on the frame of reference within which they are conceived'*. The frame of reference, or reference group, to which an individual compares themselves *'can be a class, a country, a single person or even an abstract idea'* (Runciman, 1966: 11). The theory of relative deprivation suggests that when an individual makes negative comparisons between themselves and their reference group it can lead to 'subjective deprivation' experienced as 'subjective injustice' and 'emotional distress' (Ragnarsdóttir et al., 2013: 756). Who an individual chooses as their reference group will invariably affect how the individual feels about their situation, position and status. Merton (1968: 14) states that *'some similarity in status attributes between the individual and the reference group must be perceived or imagined for the comparison to occur at all'*. For those living in poverty and financial vulnerability, the reference group can be those in the same socioeconomic position or others who are similar in other characteristics but who have a different socioeconomic position. For mothers living in poverty and financial vulnerability the reference group may be other mothers in their community with whom they perceive an attributional similarity, eg the status of motherhood, but who may have dissimilar levels of financial vulnerability. Comparing themselves to mothers with different socioeconomic realities may result in feelings of subjective disadvantage, which *'can appear as emotional distress manifested through anger and depression'* (Ragnarsdóttir et al., 2013: 758; Smith et al., 2012).

It is widely theorised that economic crises and financial vulnerability lead to distress directly, through the economic problems they bring (Lister, 2004), and also indirectly through the

subjective injustice and emotional distress they trigger in the individual through comparisons of self to the reference group (Ragnarsdóttir et al., 2013). While the theory of relative deprivation has commonly been applied to sudden economic crises, such as recessions (Ragnarsdóttir et al., 2013), it has an apposite application to the study of chronic economic conditions such as poverty and financial vulnerability. Merton (1968: 201) noted that *'" poverty" is not an isolated variable which operates in precisely the same fashion wherever found; it is only one in a complex of identifiably interdependent social and cultural variables'*. Thus, poverty per se, and not just the experience of poverty, is relational to its social context (Townsend, 1979: 132).

Experiences of poverty can be transient, i.e. mild and alleviable by existing or acquired resources; or acute, severe, chronic and persistent. This dynamic aspect of poverty is an increasing focus in the study of poverty with the recognition that poverty, particularly transient poverty, is more common than cross-sectional studies would suggest, indicating greater financial vulnerability than previously realised (Berthoud and Bryan, 2011; Fouarge and Layte, 2005; Jenkins et al., 2001). Yet, financial vulnerability is a term that is often used erroneously and synonymously with poverty. Chambers (1989: 33) emphasises that vulnerability is not the same as poverty. He explains that where poverty indicates lack or want, vulnerability is defined by *'insecurity, and exposure to risk, shocks and stress'* (Chambers, 1989: 33). That the financially vulnerable increasingly includes those who are in-work with insecure livelihoods implies consequences that are presently under-recognised (Shildrick et al., 2013).

Within a family milieu, how financial vulnerability directly, and its lived experience indirectly, creates subjective distress is not widely studied. How mothers, who have various

frames of reference, and children, who have their peers as their reference group, are affected has not been widely studied in relation to the mothers and children together. The theory of relative deprivation suggests, and the empirical evidence supports the theory, that social comparisons reduce emotional well-being for those with financial vulnerability. What is less understood are the pathways through which poverty and financial vulnerability affect the subjective distress of children and mothers. Older children show that they experience the distressing effects of poverty and financial vulnerability directly, through their own social comparisons; however, there is no research that studies the impact of their mothers' distress on the young people's experience. Moreover, studies on the pathways through which financial vulnerability has an impact on young children, who would not be expected to have either a reference group or the ability to make comparisons, are few and are not situated within a sociological framework. The gap that this research aims to fill is to understand these pathways through which financial vulnerability has an impact on young children and whether that impact is directly experienced or, as hypothesised, indirectly through their mothers' emotional wellbeing.

Reference groups and relative deprivation

Relative deprivation theory states that subjective comparisons are made between the individual and their reference group. Such comparisons influence how people feel about their circumstances: negative social comparisons can lead to *'invidious self-depreciation'* and *'personal inadequacy'* (Merton, 1968: 294). Furthermore, the salience of the subjective comparisons can be greater than the objective reality of a given situation (Ragnarsdóttir et al., 2013). Within the study of poverty, this resonates in the relatively low level of overlap between subjective feelings of poverty and objective measures of poverty (Bradshaw and Finch, 2003). There are several reasons why the relationship between subjective and objective measures of poverty is imperfect; subjective deprivation, false consciousness, intra-

familial transfer of resources, low aspirations or expectations, measurement error and the lagged effect of income poverty on living standards (Bradshaw and Finch, 2003). Financial vulnerability, in contrast to measures of objective poverty, has an inherently subjective element.

Financial vulnerability

Chambers (1989) argues that definitions of poverty conceived by professionals overlook vulnerability despite it being a primary concern to poor people themselves. He asserts that poverty, as measured by low income, can be reduced by borrowing, but that the resulting debt makes households more vulnerable (Chambers, 1989). People living in poverty have a fear of debt and are more aware than poverty professionals of the trade-offs between poverty and vulnerability, Chambers (1989: 38) posits that '*poor people all over the world are reluctant to take debts which increase their vulnerability*'.

Whelan and Maitre (2005; 2008) used the European Community household panel (ECHP) data to create a concept translated directly from Chambers' work that they call 'economic vulnerability'. They conceptualise vulnerability as insecurity and exposure to risk and shock rather than directly measured economic deprivation. Their measure of economic vulnerability includes objective risk of deprivation and subjective sense of insecurity (Whelan and Maitre, 2008: 640). They compared the groups identified as being economically vulnerable with social class and found that financial vulnerabilities operate along traditional social class lines; those from a higher social class '*had very high levels of protection from economic vulnerability*' whereas those from the traditionally lower social classes experienced persistent economic vulnerability (Whelan and Maitre, 2008: 655).

Financial vulnerability and subjective distress

Financial vulnerability, as measured by debt, money worries and managing on current income is qualitatively shown to have a negative impact on emotional wellbeing, stress, anxiety and depression (Green, 2007; Magadi and Middleton, 2007). One study conducted longitudinal, qualitative research on families living in poverty over the course of a year in 2008. Its overarching finding does not relate to poverty but to the depth and extent of financial vulnerability: in particular of debt and the inability to cope with unexpected bills and expenses (Author A; Stewart, 2009). It highlights the negative impact of financial vulnerability on adult emotional health with families reporting this as their main cause of anxiety, depression and relationship conflict. A further study emphasises that debt *'compounds vulnerability and negatively affects emotional wellbeing'* (Whitham, 2012: 5). The quantitative evidence is less abundant. One study explores the financial vulnerability on emotional distress, using data from c.6000 adults aged 16 to 64 years in Sweden. It shows that women are twice as likely, and men three times as likely, to experience anxiety, depression and reduced psychological wellbeing if they are experiencing financial vulnerability. (Starrin et al., 2009).

As regards children and young people, qualitative studies clearly show that older children (usually aged eight and above) feel ashamed, excluded and stigmatised by their family's economic disadvantage (Holscher, 2008). This subjective distress children and young people experience is said to occur because they are unable to participate in the social, leisure and celebratory activities of their peer group, which can adversely affect their friendships and self-esteem (Ridge, 2009; Ridge, 2002). Additionally, children and young people are reported as being aware of, and worried about, the financial pressure their family is under, which has further detrimental effects on their subjective distress (Whitham, 2012). This suggests that, at

least in part, poverty and financial vulnerability have direct negative impacts on children and young people's emotional well-being due to negative social comparisons.

There are a variety of causal pathways proposed for the impacts on financial vulnerability on child SEB wellbeing. The stress induced by financial vulnerability, be it the result of directly experienced resource deprivation, or the subjective deprivation induced by subjective comparisons to the reference group, is postulated to have adverse impacts on mothers' emotional wellbeing which in turn have adverse effects on child wellbeing, creating an indirect path from financial vulnerability to child wellbeing via maternal wellbeing (Conger et al., 2010; Yeung et al., 2002). This paper uses structural equation modelling to decompose the hypothesised relationship between financial vulnerability, child SEB wellbeing and maternal emotional distress.

Data and methods

The analysis is conducted using data from the Growing Up in Scotland (GUS) study, a birth and child cohort study, with an annual frequency of data collection, initiated to record the characteristics, circumstances, health and behaviours of children in the early years in Scotland (Anderson et al., 2007). A stratified, clustered sampling strategy was used: a named sample was selected on the basis of the children's dates of birth using UK Child Benefit records, chosen because 97% of all eligible families were registered for this, then universal, benefit (2005). The response rate across the birth and child cohorts was 80% of all in-scope children producing an achieved sample for the birth cohort of 5,217 babies at sweep one (Anderson et al., 2007: 196) reducing to 3833 children at sweep 5; see table 1 for more details on survey response rates. The main carer, usually the mother (approximately 98%), is the respondent in GUS. The analysis is undertaken using Stata 13 and the 'surveyset' procedure is tested to take account of the complex sampling, i.e. strata, clustering, sample

selection weights and longitudinal attrition weights. For more information see the annual user guides on GUS (Bradshaw et al., 2010; Bradshaw et al., 2009; Corbett et al., 2007; Corbett et al., 2006; Corbett et al., 2005).

Table 1 – Sweep information for the birth cohort

Sweep	Year	Achieved sample	Response rate (all eligible cases)	Response rate (as % of sweep 1)
1	2005 - 2006	5,217	80%	100%
2	2006 – 2007	4,512	88%	87%
3	2007 – 2008	4,193	91%	80%
4	2008 – 2009	3,994	91%	77%
5	2009 - 2010	3,833	92%	73%

Source: GUS sweeps 1-5

The dependent variable – child SEB wellbeing

The child SEB outcome is measured by the age-appropriate Strengths and Difficulties Questionnaire available for children aged 4 to 17 years old. For the children in this study (aged 4/5) the questionnaire was completed by mothers. There are 5 dimensions to the SDQ questionnaire: conduct problems, emotional symptoms, hyperactivity, peer relationships, and pro-social behaviour (Goodman, 1997: 581). The first four of these are summed to provide a total score. The fifth dimension, pro-social behaviour, cannot be incorporated into the total score *'since the absence of pro-social behaviours is conceptually different from the presence of psychological difficulties'* (Goodman, 1997: 582). The resulting score from the summed first four dimensions is then reversed and standardised, giving a mean of zero and a standard deviation of one. Positive scores denote higher than average SEB wellbeing and negative scores denote lower SEB wellbeing.

Financial vulnerability

GUS collects data in sweep five on financial vulnerability. The exact wording of the questions and their possible responses are set out below (Bradshaw et al., 2010):

- **Money worries**: how often would you say you have been worried about money during the last few weeks?
    - 1 almost all the time,
    - 2 quite often,
    - 3 only sometimes,
    - 4 never

- **Household debt**: thinking back over the past 12 months, how often would you say you have had trouble with debts that you found hard to repay?
    - 1 almost all the time,
    - 2 quite often,
    - 3 only sometimes,
    - 4 never

- **Manage financially**: taking everything together, which of the phrases on this card best describes how you and your family are managing financially these days?
    - 1 Manage very well
    - 2 Manage quite well
    - 3 Get by alright
    - 4 Don't manage very well
    - 5 Have some financial difficulties
    - 6 Are in deep financial trouble

These three variables form the latent construct 'financial vulnerability' estimated in the first measurement part of the structural equation model discussed in the methods section.

Maternal emotional distress (SF-12)

In sweep 5 data are collected using the SF-12 health survey form, which is the instrument of choice for large scale and longitudinal survey studies (Jenkinson et al., 1997; Ware et al., 1996). For this paper seven questions from the SF-12 pertaining to maternal emotional distress are used (EMD1-EMD7). These are:

- **EMD1** - In general, would you say your health is excellent, very good, good, fair, or poor?:
    - 1 Excellent
    - 2 Very Good
    - 3 Good
    - 4 Fair

- 5 Poor
- 6 Can't say

- **EMD2 -** During the past four weeks, have you accomplished less than you would like as a result of any emotional problems, such as feeling depressed or anxious?
  - 1 Yes
  - 2 No

- **EMD3 -** During the past four weeks, did you not do work or other regular activities as carefully as usual as a result of any emotional problems, such as feeling depressed or anxious?
  - 1 Yes
  - 2 No

- **EMD4 -** How much time during the past four weeks have you felt calm and peaceful?
  - 1 All of the time
  - 2 Most of the time
  - 3 A good bit of the time
  - 4 Some of the time
  - 5 A little of the time
  - 6 None of the time

- **EMD5 -** How much of the time during the past four weeks did you have a lot of energy?
  - 1 All of the time
  - 2 Most of the time
  - 3 A good bit of the time
  - 4 Some of the time
  - 5 A little of the time
  - 6 None of the time

- **EMD6 -** How much of the time during the past four weeks have you felt down?
  - 1 All of the time
  - 2 Most of the time
  - 3 A good bit of the time
  - 4 Some of the time
  - 5 A little of the time
  - 6 None of the time

- **EMD7 -** During the past four weeks, how much of the time has your physical health or emotional problems interfered with your social activities like visiting with friends, relatives etc?
  - 1 All of the time
  - 2 Most of the time

- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

These seven variables form the latent construct ‘maternal emotional distress’ estimated in the second measurement part of the structural equation model discussed in the methods section.

Equivalised income

Economies of scale, where people pool their resources, i.e. share their wealth or their poverty with other family or household members (Alcock, 2006), are taken account of in the measurement of income through equivalence scales, which assign a ‘weight’ to each member. The equivalence scale used here is the modified Organisation for Economic Co-operation and Development (OECD) equivalence scale, which gives a weight of 1.0 for the first adult in a household, 0.5 for an additional person aged 15 years or over, and 0.3 for any children aged 0- 14 years (Chanfreau and Burchardt, 2008), and is a continuous measure taken at sweep 5.

Control variables

The existing research identifies factors that should be controlled for in analysis that includes socioeconomic disadvantage and child SEB wellbeing (Kiernan and Huerta, 2008; Kiernan and Mensah, 2009; Schoon et al., 2010; Schoon et al., 2012). These factors are: child’s gender, family composition, maternal education, maternal employment, birth order of the child, and the age of the mother at the birth of her first child.

Child’s gender

The gender of a child is found to be associated with his/her SEB wellbeing: being a boy is associated with lower scores on this developmental outcome (Blair et al., 2004). Research

shows that boys mature more slowly than girls (Cohn, 1991), that girls are more content than boys to sit still and listen in school, and that boys are more physical and active (King and Gurian, 2006); all of which may affect perceptions of boys' SEB well-being. The gender variable is a straightforward binary girl/boy variable.

Family composition

The existing evidence on the impact of family composition on child wellbeing is often contradictory. Furthermore, family composition often focuses on the differences between married and unmarried parents and not on family *transitions*, i.e. moving from a couple to a lone parent family or vice versa. As the data here are longitudinal, using all five sweeps, the family composition variable can focus on transitions. The derived variable is categorical and the categories are:

- 'stable couple family', where a couple has been together since the start of the study (reference category);
- 'stable lone parent family', where the respondent is the sole adult in the household in each of the five years of the study;
- 'lone parents who have re-partnered' – there is no distinction in the measure on the point at which the respondent re-partners;
- 'couple families who have separated' – the same caveat applies as before; and
- 'separation(s) and re-partnering(s)' – this category does not differentiate between those who may be separating and re-partnering with the same or with different partners.

Maternal education

Maternal education is highly significantly associated with both the socioeconomic position of a family and with the developmental outcomes of a child (Hansen et al., 2010; Melhuish et al., 2008). Maternal education is relatively stable in GUS and so the measure taken at sweep five is used in the analysis. The categories are:

- Degree or equivalent (reference category)
- Vocational qualification below degree

- Higher Grade/A-level
- Standard Grade/GCSE
- No Qualifications

Maternal employment

Maternal employment is significantly associated with the socioeconomic position of a family, with maternal mental wellbeing and with child outcomes (Thomas et al., 2005; Zick et al., 2001). The measure for maternal employment taken at sweep five is used in the analysis. The categories are:

- Full-time employed (reference category)
- Part-time employed
- Not in paid work

Study child s birth order

Birth order is posited to be associated with higher levels of child development (Bradshaw, 2011). However, it is not clear what affect birth order has on SEB wellbeing as it is not well documented. The birth order variable is a simple binary first born/not first born measure.

Age of mother at first child's birth

Having a younger mother is associated in the literature with lower SEB wellbeing (Bradshaw and Tipping, 2010; Bromley, 2009). Younger mothers are also at increased risk of living in poverty and for living in poverty for longer periods of time (Barnes et al., 2010). The age of the mother at the birth of her first child is a continuous variable in the model. The summary statistics for all variables can be found in table 2.

Table 2 Summary of all variables

Variables	count	mean	sd	min	max
Child SEB	3537	0.00	1.00	-4.93	1.65
Financial Vulnerability	3537	0.00	1.00	-1.02	2.38
Financial Vulnerability variables:					
How often money worries (FV1)	3537	1.81	0.79	1.00	3.00
How manage financially (FV2)	3537	1.57	0.65	1.00	3.00

How often debts hard to pay (FV3)	3537	1.40	0.66	1.00	3.00
Maternal emotional distress variables:					
General health (EMD1)	3537	2.32	0.99	1.00	6.00
Time felt calm (EMD2)	3537	2.99	1.10	1.00	6.00
Time felt energetic (EMD3)	3537	3.03	1.14	1.00	6.00
Time felt down (EMD4)	3537	4.85	1.06	1.00	6.00
Time health interfered socially (EMD5)	3537	5.40	1.12	1.00	6.00
limited accomplishments (EMD6)	3537	1.85	0.36	1.00	2.00
limited work/activities (EMD7)	3537	1.88	0.33	1.00	2.00
Income (equivalised)	3537	24676.96	12442.59	1286.77	68965.52
Birth order (ref: first born child)	3537	0.51	0.50	0.00	1.00
Male	3537	0.51	0.50	0.00	1.00
Family transition dummy variables:					
Couple	3537	0.78	0.41	0.00	1.00
Lone parent	3537	0.08	0.27	0.00	1.00
Re-partnered lone parent	3537	0.05	0.21	0.00	1.00
Separated couple	3537	0.06	0.24	0.00	1.00
Separations/Repartnerings	3537	0.03	0.18	0.00	1.00
Age at birth of first child	3537	27.02	5.92	11.00	46.00
Maternal employment dummy variables:					
Full-time	3537	0.77	0.42	0.00	1.00
Part-time	3537	0.12	0.33	0.00	1.00
Not in paid work	3537	0.10	0.31	0.00	1.00
Maternal education dummy variables:					
No Qualifications	3537	0.06	0.24	0.00	1.00
Standard grade (GCSE)	3537	0.14	0.34	0.00	1.00
Higher grade (A level)	3537	0.07	0.26	0.00	1.00
Vocational	3537	0.40	0.49	0.00	1.00
Degree	3537	0.33	0.47	0.00	1.00

Source: GUS sweeps 1 to 5

Methods

Structural Equation Modelling (SEM) is used to understand the pathways through which financial vulnerability has an impact on child SEB wellbeing, and to ascertain whether these impacts are experienced directly or indirectly via maternal emotional distress, while controlling for confounding variables. SEM comprises two components in one model: the measurement part and the structural part (Acock, 2013). The measurement part comprises confirmatory factor analysis which allows a latent variable to be estimated from its manifest indicator variables while accurately isolating any measurement error (Acock, 2013). The predictive power of the model is stronger when measurement error is removed as it is assumed to be a random error with no explanatory power (Acock, 2013). For this paper the latent construct financial vulnerability is estimated using three ordinal variables previously described: ‘money worries’, ‘household debt’ and ‘manage financially’; and maternal

emotional distress is estimated using a measurement model and the seven variables, EMD1 – EMD7, described previously.

The structural part of the model is a path analysis that can be decomposed into *direct* and *indirect* effects pathways. The structural part of the model can show theoretically causal linkages which can provide evidence to support a causal theory (Acock, 2013). Figure 1 presents the full structural equation model which shows the measurement parts of the model with direct pathways leading from financial vulnerability to maternal emotional distress and child SEB wellbeing; from maternal emotional distress to child SEB wellbeing; and an indirect path from financial vulnerability to SEB wellbeing via maternal emotional distress. The control variables described earlier have pathways to maternal emotional distress, to financial vulnerability and to child SEB wellbeing.

The use of structural equation modelling in this study brings manifold advantages over the traditional regression modelling techniques. The first is that the latent constructs financial vulnerability and maternal emotional distress can be estimated as integral parts of the model allowing the measurement error to be estimated. The second is that SEM allows for direct and indirect effects to see what effects, if any, are direct to the child and which operate through the pathway of maternal emotional distress. The third is that the model allows pathways from all of the control variables to the two measurement models (financial vulnerability and maternal emotional distress) and the outcome variable (child SEB) to be estimated separately, which decomposes the influence of these confounding factors, while providing additional evidence to further the substantive knowledge in this area. SEM relies on correlations between the variables in the model for its estimation procedures. A correlation of all the single variables (including dummy variables) used in this analysis can be found in table 3.

Table 3 Correlation matrix of all variables (including dummies)

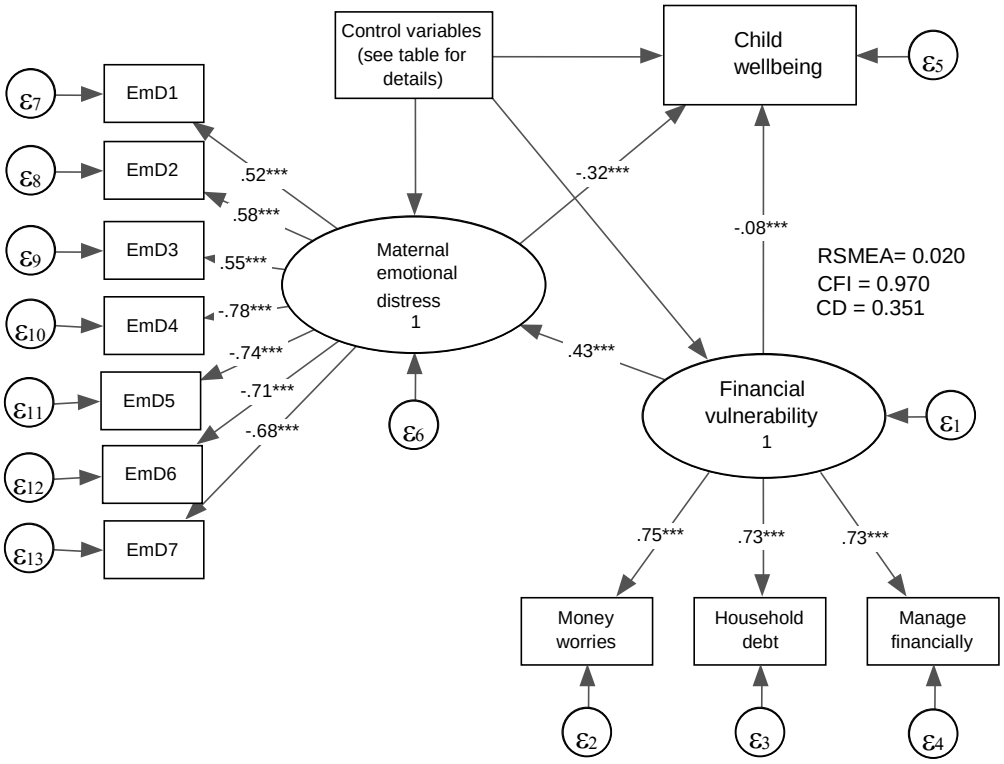
	SEB	FV1	FV2	FV3	MMH1	MMH2	MMH3	MMH4	MMH5	MMH6	MMH7	In-come	First born	Male	Couple	Lone parent	Repart ner	Sep couple	Sep+ Repart	Age	Full-time	Part-time	Unem ployed	No Quals	Stand	Higher	Voca-tional	Degre e
SEB	1																											
FV1	-0.226	1																										
FV2	-0.209	0.566	1																									
FV3	-0.243	0.538	0.523	1																								
MMH1	-0.269	0.227	0.229	0.241	1																							
MMH2	-0.299	0.237	0.208	0.179	0.347	1																						
MMH3	-0.262	0.207	0.213	0.156	0.460	0.590	1																					
MMH4	0.321	-0.292	-0.252	-0.274	-0.359	-0.492	-0.430	1																				
MMH5	0.284	-0.241	-0.204	-0.256	-0.403	-0.365	-0.386	0.589	1																			
MMH6	0.251	-0.265	-0.216	-0.262	-0.359	-0.416	-0.390	0.550	0.553	1																		
MMH7	0.226	-0.239	-0.203	-0.256	-0.329	-0.379	-0.353	0.514	0.548	0.754	1																	
Income	0.241	-0.331	-0.381	-0.377	-0.215	-0.073	-0.070	0.181	0.214	0.172	0.169	1																
First born	0.060	0.033	0.040	0.044	0.010	0.052	0.016	-0.032	-0.049	-0.044	-0.045	-0.143	1															
Male	-0.145	0.013	0.024	-0.007	0.011	0.033	0.013	-0.026	-0.029	-0.024	-0.026	-0.010	0.014	1														
Couple	0.197	-0.239	-0.187	-0.306	-0.164	-0.043	-0.048	0.176	0.186	0.165	0.156	0.401	0.052	-0.025	1													
Lone parent	-0.115	0.129	0.135	0.195	0.110	0.006	0.022	-0.104	-0.147	-0.131	-0.128	-0.302	-0.070	0.032	-0.550	1												
RepartLone	-0.074	0.089	0.047	0.127	0.064	0.018	0.014	-0.044	-0.054	-0.025	-0.038	-0.122	-0.038	-0.022	-0.425	-0.065	1											
Sep couple	-0.050	0.139	0.103	0.130	0.077	0.044	0.042	-0.126	-0.091	-0.105	-0.095	-0.160	0.054	0.013	-0.473	-0.073	-0.056	1										
Seps/Reparts	-0.126	0.068	0.037	0.092	0.038	0.012	0.007	-0.034	-0.027	-0.019	0.002	-0.117	-0.041	0.019	-0.353	-0.054	-0.042	-0.047	1									
Age	0.197	-0.219	-0.198	-0.319	-0.157	-0.020	-0.027	0.136	0.161	0.115	0.121	0.510	-0.217	-0.027	0.365	-0.211	-0.208	-0.106	-0.138	1								
Fulltime	0.201	-0.255	-0.268	-0.321	-0.182	-0.069	-0.060	0.195	0.206	0.190	0.196	0.523	-0.012	-0.015	0.564	-0.466	-0.025	-0.326	-0.144	0.313	1							
Parttime	-0.046	0.126	0.134	0.136	0.045	0.017	0.000	-0.078	-0.045	-0.051	-0.064	-0.255	-0.015	-0.015	-0.301	0.200	0.011	0.244	0.062	-0.094	-0.692	1						
Unemployed	-0.227	0.215	0.224	0.295	0.202	0.076	0.082	-0.183	-0.235	-0.207	-0.201	-0.443	0.033	0.037	-0.449	0.424	0.022	0.185	0.131	-0.329	-0.627	-0.129	1					
No Quals	-0.147	0.091	0.098	0.126	0.106	0.033	0.038	-0.113	-0.121	-0.094	-0.091	-0.247	0.084	0.001	-0.165	0.117	0.104	0.012	0.065	-0.200	-0.214	0.044	0.246	1				
Standard	-0.080	0.052	0.061	0.105	0.064	-0.018	-0.004	-0.038	-0.059	-0.030	-0.019	-0.189	0.040	0.019	-0.129	0.112	0.065	0.020	0.026	-0.191	-0.125	0.029	0.141	-0.101	1			
Higher	0.023	-0.019	-0.002	-0.005	-0.007	-0.012	0.012	0.014	0.008	0.021	0.017	-0.034	0.016	0.005	0.012	0.009	-0.001	-0.009	-0.028	-0.038	0.007	0.010	-0.021	-0.071	-0.111	1		
Vocational	-0.020	0.060	0.074	0.089	0.036	-0.033	-0.024	0.013	-0.003	-0.002	-0.015	-0.150	0.002	-0.030	-0.057	0.021	0.032	0.034	0.017	-0.122	-0.015	0.033	-0.016	-0.207	-0.325	-0.228	1	
Degree	0.142	-0.136	-0.170	-0.231	-0.134	0.038	0.002	0.064	0.102	0.060	0.066	0.438	-0.082	0.015	0.230	-0.168	-0.133	-0.051	-0.055	0.389	0.211	-0.084	-0.199	-0.178	-0.280	-0.196	-0.574	1

Source: GUS sweeps 1 to 5

The model was estimated using Stata 13. The svyset weighting facility was tested in the modelling framework but was not used in the final model of this paper as it made little difference to the coefficients or standard errors but did reduce the goodness of fit statistics available post-estimation.

Results

Figure 1 SEM model



The three financial vulnerability indicator variables load highly onto the latent construct 'financial vulnerability' with respective loadings of 'money worries' 0.75, 'household debt' 0.73 and 'managing financially' 0.73, all of which are significant at the 0.1% level. The seven SF-12 indicator variables load highly and moderately highly onto the latent construct 'maternal emotional distress' with respective loadings of 'EMD1' 0.52, 'EMD2' 0.58, 'EMD3' 0.55, 'EMD4' -0.78, 'EMD5' -0.74, 'EMD6' -0.71, 'EMD7' -0.68, all of which are significant at the 0.1% level.

Table 4 Goodness-of-fit statistics

Goodness-of-fit statistics		Value
Root mean squared error of approximation	(RMSEA)	0.020
Comparative fit index	(CIF)	0.970
Tucker-Lewis index	(TLI)	0.981
Coefficient of determination	(CD)	0.350
N		3583
df		355

Source: GUS sweeps 1 to 5

The goodness-of-fit measures, shown in table four, are as follows: the root mean squared error of approximation (RMSEA) is 0.020, much lower that the recommended 0.5 and closer to the ideal of zero (Acock, 2013; Hu and Bentler, 1999; Statacorp, 2013); Comparative fit index (CIF) is 0.970, higher than the recommended 0.95; the Tucker-Lewis index (TLI) at 0.981 is higher than the recommended 0.95; and the coefficient of determination (r-squared, ranging between 0 and 1) at 0.351 is moderate (Statacorp, 2013).

Table 5 Direct and indirect effects

	Direct effects				Indirect effects			
Outcome	Coef.	Std. Err.	P-value ≤	Std. Coef.	Coef.	Std. Err.	P-value ≤	Std. Coef.
Child SEB <-								
Maternal emotional distress	-0.62	0.042	0.000	-0.32	-	-	-	-
Financial vulnerability	-0.13	0.040	0.001	-0.08	-0.24	0.015	0.000	-0.14
Income	0.00	0.000	0.014	0.05	0.00	0.000	0.000	0.06
First born	0.22	0.031	0.000	0.11	-0.02	0.013	0.214	-0.01
Male	-0.25	0.030	0.000	-0.13	-0.02	0.012	0.201	-0.01
Family transitions (ref: stable couple):								
Stable lone parent	0.09	0.069	0.193	0.02	-0.06	0.029	0.051	-0.02
Repartnered Lone parent	-0.06	0.072	0.427	-0.01	-0.09	0.031	0.003	-0.02
Separated couple	0.09	0.070	0.192	0.02	-0.13	0.030	0.000	-0.03
Separations and repartnerings	-0.39	0.086	0.000	-0.07	0.00	0.036	0.971	0.00
Age of mother at first birth	0.01	0.003	0.001	0.06	0.00	0.001	0.097	0.01
Employment status (ref: full-time work)								
Part-time work	0.02	0.054	0.701	0.01	-0.06	0.023	0.012	-0.02
Not in paid work	-0.17	0.067	0.013	-0.05	-0.22	0.030	0.000	-0.07
Education status (ref: degree or above)								
No qualifications	-0.30	0.073	0.000	-0.07	-0.05	0.030	0.101	-0.01
Standard/GCSE	-0.15	0.053	0.005	-0.05	0.02	0.022	0.399	0.01
Higher/A-level	-0.02	0.063	0.800	0.00	0.04	0.026	0.158	0.01
Vocational below degree	-0.07	0.038	0.054	-0.04	0.01	0.016	0.353	0.01
Financial vulnerability <-								
Income	0.00	0.000	0.000	-0.34	-	-	-	-
First born	-0.01	0.021	0.553	-0.01	-	-	-	-
Male	0.01	0.020	0.788	0.00	-	-	-	-
Family transitions (ref: stable couple):								
Stable lone parent	0.05	0.046	0.311	0.02	-	-	-	-
Repartnered Lone parent	0.17	0.048	0.001	0.06	-	-	-	-
Separated couple	0.17	0.047	0.000	0.07	-	-	-	-
Separations and repartnerings	0.08	0.057	0.148	0.03	-	-	-	-
Age of mother at first birth	-0.01	0.002	0.000	-0.08	-	-	-	-
Employment status (ref: full-time work)								
Part-time work	0.14	0.035	0.000	0.08	-	-	-	-
Not in paid work	0.26	0.044	0.000	0.14	-	-	-	-
Education status (ref: degree or above)								

No qualifications	0.00	0.049	0.960	0.00	-	-	-	-
Standard/GCSE	-0.01	0.035	0.791	-0.01	-	-	-	-
Higher/A-level	-0.04	0.042	0.399	-0.02	-	-	-	-
Vocational below degree	0.04	0.025	0.163	0.03	-	-	-	-
Maternal Emotional distress (EMD) <-								
Financial vulnerability	0.38	0.025	0.000	0.43				
Income	0.00	0.000	0.141	0.04	0.00	0.000	0.000	-0.15
First born	0.03	0.018	0.070	0.03	0.00	0.008	0.553	0.00
Male	0.02	0.017	0.203	0.02	0.00	0.008	0.788	0.00
Family transitions (ref: stable couple):								
Stable lone parent	0.06	0.040	0.124	0.03	0.02	0.018	0.312	0.01
Repartnered Lone parent	0.05	0.043	0.270	0.02	0.06	0.019	0.001	0.03
Separated couple	0.11	0.041	0.010	0.05	0.07	0.018	0.000	0.03
Separations and repartnerings	-0.05	0.051	0.312	-0.02	0.03	0.022	0.150	0.01
Age of mother at first birth	0.00	0.002	0.631	0.01	0.00	0.001	0.000	-0.03
Employment status (ref: full-time work)								
Part-time work	0.01	0.031	0.801	0.01	0.05	0.014	0.000	0.03
Not in paid work	0.19	0.040	0.000	0.12	0.10	0.018	0.000	0.06
Education status (ref: degree or above)								
No qualifications	0.08	0.043	0.057	0.04	0.00	0.019	0.960	0.00
Standard/GCSE	-0.02	0.031	0.435	-0.02	0.00	0.013	0.791	0.00
Higher/A-level	-0.04	0.037	0.298	-0.02	-0.01	0.016	0.400	-0.01
Vocational below degree	-0.05	0.023	0.046	-0.04	0.01	0.010	0.165	0.01

Source: GUS sweeps 1 to 5

- no indirect path

Table 5 shows the direct and indirect effects in the model. The first section of the model shows that maternal emotional distress has the largest negative effect on child SEB wellbeing, accounting for almost a third of a standard deviation decrease (β = -0.32). Financial vulnerability, as hypothesised, has a direct (β = -0.08) and an indirect (β = -0.14) negative effect on child SEB wellbeing through the pathway of maternal emotional distress (total effect size = -0.22). Other variables that have an impact on child SEB wellbeing are: (1) income, direct β = 0.05 and indirect β = 0.06: higher income is associated with more positive levels of child SEB wellbeing; (2) not being the first born, ie having siblings, is associated with higher SEB wellbeing, (direct β = 0.11); (3) boys, as expected, have lower SEB wellbeing, (direct β = -0.13); (4) family transitions - stable lone parent (indirect β = -0.02), re-partnered lone parent (indirect β = -0.02), separated couple (indirect β = -0.03), through their effect on maternal emotional distress, and separations and re-partnerings (direct β = -0.07), all compared to stable couple parents. This means that having a mother with repeated separations and re-partnerings is the only family formation that has a direct, negative association with SEB wellbeing; (5) age of the mother at first birth (direct β = 0.06); (6) not being in paid work, direct β = -0.05 and indirect β = -0.07; and (7) all education levels (except Higher/A-level grade) compared to degree educated mothers with direct betas of -0.07 (no qualifications), -0.05 (standard grade/GCSE) and vocational level (-0.04). As the coefficients for this model are additive, this means that the combined direct and indirect coefficients for income, financial vulnerability and employment sum to 0.45 of a standard deviation decrease in child SEB wellbeing, which, when combined with the direct effect of maternal emotional distress (0.32) amounts to a -0.77 of a standard deviation decrease in SEB wellbeing.

In the second section, the model shows the variables that are directly associated with financial vulnerability as there are no indirect effects on financial vulnerability. The largest effect comes from income (β = -0.34) which accounts for 34% of a standard deviation increase in financial vulnerability. Other variables statistically associated with increased levels of financial vulnerability are: (1) being a re-partnered lone parent (β = 0.06) or being a separated couple (β = 0.07), compared to being a stable couple; (2) the age of the mother at the birth of first child (β = 0.08) with financial vulnerability decreasing as maternal age increases; and (3) being in either part-time work (β = 0.08) or not in paid work (β = 0.14) compared to being employed full-time.

In the third section, the model shows that financial vulnerability has the largest effect, greater than income, on maternal emotional distress (β = 0.43), accounting for 43% of a standard deviation increase. Income has an insignificant direct effect on maternal emotional distress; however, it has a strong indirect effect mediated through its association with financial vulnerability (β = -0.15). This suggests that financial vulnerability is a more important factor in increased emotional distress than income alone and that it is important irrespective of the level of income a family has. Other variables statistically significantly associated with increased maternal emotional distress are: having an employment status of 'not in paid work' (β = 0.18), and having been part of a couple that has since separated (β = 0.08): each of these has a direct pathway and an indirect pathway through its association with financial vulnerability. The remaining significant variables have an indirect pathway through financial vulnerability: (1) being a re-partnered lone parent (β = 0.03); (2) having part-time compared to full-time employment (β = 0.03); and (3) the age of the mother at the birth of first child (β = -0.03).

Discussion

The results strongly demonstrate that experiencing financial vulnerability is significantly associated with higher levels of maternal emotional distress; an effect even greater than that of income. This corresponds to the literature where the presence of financial vulnerability is associated with high levels of stress, anxiety and depression in Swedish adults (Starrin et al., 2009). They show too that the broader, more subjective, concept of financial vulnerability is more salient than the objective measure of income, a finding premised in the theory of relative deprivation (Ragnarsdóttir et al., 2013). Financial vulnerability encapsulates the objective deprivation resulting from low income and the subjective deprivation associated with comparative aspects such as feelings towards coping on income. The results also suggest, as per Chambers' (1989) assertion, that measures to alleviate low income, such as increased borrowing, increases vulnerability and that this vulnerability is keenly felt. This has relevance to academia, policy and practice and suggests that consideration should be given to financial vulnerability when working with families experiencing poverty. For practice situations, financial vulnerability is an easily measured concept that could be employed to establish mothers' heightened vulnerability and raised risk of emotional distress.

The results also strongly demonstrate that experiencing financial vulnerability is significantly associated with lower child SEB wellbeing which supports the findings in the qualitative literature (Author A; Whitham, 2012). The literature on older children indicates that the impact of financial vulnerability is directly experienced through the comparisons they make with their peer (reference) group (Ridge, 2002). It was hypothesised in this paper that young children would be unable to make their own social comparisons and that the effect of financial vulnerability experienced by young children would be indirect, through the pathway of maternal emotional distress. This is indeed the case for almost two thirds of the effect;

however, the other third of the effect is experienced directly by the child despite their young ages. It is a possible that the remaining third of the effect on the child may have another, unmeasured, pathway through a maternal characteristic or it may be that young children are directly affected by financial vulnerability. What is of note here is the young age of the children for whom this association is statistically visible.

These findings show that child SEB wellbeing is responsive to financial vulnerability and maternal emotional distress which suggests that were these conditions to change then child wellbeing might change too. That children of such a young age display lower SEB wellbeing when maternal vulnerabilities are high is a central finding of this paper raising two thoughts: (1) children's SEB wellbeing is highly sensitive to their mothers' socioeconomic status and emotional distress; and (2) this implies that SEB is a malleable rather than a fixed trait that may respond to intervention.

There are two other results of incidental note; the effects of paid work on child and maternal wellbeing and the effects of family formation. A mother not being in paid work greatly increases her emotional distress and financial vulnerability. This in turn results in decreased child wellbeing. In a time of austerity measures that have disproportionately affected female employment the effect of not being in paid work on maternal emotional distress is substantively and statistically important. What is not modelled in this analysis is the nature of the effects of unpaid work on maternal emotional distress, ie whether unpaid care work leads to greater emotional distress or whether paid employment leads to reduced emotional distress, or a combination thereof. The literature in this area is large, varied and provides evidence to support both of these theses. This has not been modelled in this paper but would make an interesting area of future study using the GUS data. The results in relation to family

formation show that family transitions per se are not key to child SEB wellbeing but that they are key to financial vulnerability and, to a lesser extent, maternal emotional distress. The 'couple who separated' family transition was directly linked to poorer maternal emotional distress, which suggests that women experiencing separation would benefit from targeted emotional and financial support. The categories 'stable lone parent' and 're-partnered lone parent' have no significant association with child SEB wellbeing directly, which suggests that the effect of a couple separating on maternal emotional distress is likely to be time-limited. In the end, only 'separations and re-partnerings' was directly linked to poorer child SEB wellbeing, which may indicate flux and uncertainty in a family's life. As the literature using cross-sectional data often finds negative effects associated with lone-parenthood the longitudinal approach taken in this paper benefits the analysis of the effects of family formation on child wellbeing.

Conclusions

In conclusion, this paper shows that young children experience the effects of financial vulnerability indirectly via their mothers' emotional distress and not through their own social comparisons as is the case with older children. It shows too that financial vulnerability has a greater negative effect on maternal emotional distress than income per se suggesting that the subjective element of financial vulnerability is salient. It also shows that child SEB wellbeing is malleable and that children are emotional barometers responding to and corresponding with their mothers' wellbeing.

A second conclusion is that actions taken to ameliorate the effects of income deprivation can paradoxically increase financial vulnerability, and that this is an added stressor for those living in low incomes, a factor which ought to be considered when working with, or legislating for, families living in socioeconomic disadvantage. Furthermore, not being in paid

work affects maternal emotional distress and children SEB wellbeing independently, even after income and financial vulnerability are controlled for, which is important and may have implications for policy, eg on access to affordable, high-quality childcare. Important too is the evidence elicited due to the longitudinal nature of the data that repeated separations and re-partnerings is the only category of family formation directly associated with reduced child SEB wellbeing. This provides evidence to counter the culture of blame towards 'family breakdown' common in current political discourse (DfE, 2012). It also has implications for practice: this evidence suggests that families who experience flux in their relationships are particularly vulnerable.

The implications of these findings are relevant to academia, policy and practice. It adds to the knowledge base in this field and makes the recommendation that financial vulnerability ought to be considered in tandem with income poverty and other measures of socioeconomic disadvantage.

The Growing Up in Scotland data are publicly available from the UK Data Service:

http://ukdataservice.ac.uk/

References

Acock AC. (2013) *Discovering Structural Equation Modeling Using Stata, Revised Edition,* Texas: Stata Press.

Alcock P. (2006) *Understanding poverty,* Basingstoke: Macmillan.

Anderson S, Bradshaw P, Cunningham-Burley C, et al. (2007) Growing up in Scotland: Sweep One Overview Report. Edinburgh: Scottish Government.

Barnes M, Chanfreau J and Tomaszewski W. (2010) Growing up in Scotland: the Circumstances of Persistently Poor Children. Edinburgh: Scottish government.

Berthoud R and Bryan M. (2011) Income, Deprivation and Poverty: A Longitudinal Analysis. *Journal of Social Policy* 40: 135-156.

Blair KA, Denham SA, Kochanoff A, et al. (2004) Playing it cool: Temperament, emotion regulation, and social behavior in preschoolers. *Journal of School Psychology* 42: 419-443.

Bradshaw J and Finch N. (2003) Overlaps in dimensions of poverty. *Journal of Social Policy* 32: 513-525.

Bradshaw P. (2011) Growing Up in Scotland: Changes in child cognitive ability in the pre-school years. Edinburgh Scottish Government.

Bradshaw P, Marryat L, Corbett J, et al. (2009) Growing Up In Scotland Sweep 4: 2008-2009 - User Guide. Edinburgh: Scottish Government.

Bradshaw P, Marryat L, Mabelis J, et al. (2010) Growing Up In Scotland Sweep 5: 2009-2010 - User Guide. Edinburgh: Scottish Government.

Bradshaw P and Tipping S. (2010) Growing up in Scotland: Children's Social, Emotional and Behavioural Characteristics at Entry to Primary School. Edinburgh: Scottish Government.

Bromley C. (2009) GROWING UP IN SCOTLAND: The impact of children's early activities on cognitive development. Edinburgh: Scottish Government.

Chambers R. (1989) Editorial Introduction: Vulnerability, Coping and Policy. *IDS Bulletin* 20: 1-7.

Chanfreau J and Burchardt T. (2008) Equivalence scales: rationales, uses and assumptions. Edinburgh: Scottish Government.

Cohn LD. (1991) Sex differences in the course of personality development : a meta-analysis (English). *Psychological bulletin* 109: 252-266.

Corbett J, Marryat L and Bradshaw P. (2005) Growing up in Scotland Sweep 1 User Guide. *UK data archive study number 5760.* Edinburgh: Scottish Centre for Social Research.

Corbett J, Marryat L and Bradshaw P. (2006) Growing up in Scotland sweep 2 User Guide. *UK Data Archive study number 5760.* Edinburgh: Scottish Centre for Social Research.

Corbett J, Marryat L, Bradshaw P, et al. (2007) Growing up in Scotland Sweep 3 User Guide. *UK Data Archive study number 5760.* Edinburgh: Scottish Centre for Social Research.

DfE. (2012) *Measuring child poverty: a consultation on better measures of child poverty,* London: HM Stationery Office.

Fouarge D and Layte R. (2005) Welfare regimes and poverty dynamics: The duration and recurrence of poverty spells in Europe. *Journal of Social Policy* 34: 407-426.

Goodman R. (1997) The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology and Psychiatry* 38: 581-586.

Green M. (2007) *Voices of people experiencing poverty in Scotland,* York: Joseph Rowntree Foundation and the Poverty Alliance.

Hansen K, Joshi H and Dex S. (2010) *Children of the 21st century,* Bristol: The Policy Press.

Holscher P. (2008) Children and young people's experiences of poverty and social exclusion. In: Ridge T and Wright S (eds) *Understanding inequality, poverty and wealth.* Bristol: The Policy Press, 181-203.
Hu Lt and Bentler PM. (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal* 6: 1-55.
Jenkins SP, Rigg JA, Devicienti F, et al. (2001) *The dynamics of poverty in Britain,* Leeds: Corporate Document Services for the Department for Work and Pensions.
Jenkinson C, Layte R, Jenkinson D, et al. (1997) A shorter form health survey: can the SF-12 replicate results from the SF-36 in longitudinal studies? *Journal of Public Health* 19: 179-186.
Kiernan KE and Huerta MC. (2008) Economic deprivation, maternal depression, parenting and children's cognitive and emotional development in early childhood. *British Journal of Sociology* 59: 783-806.
Kiernan KE and Mensah FK. (2009) Poverty, Maternal Depression, Family Status and Children's Cognitive and Behavioural Development in Early Childhood: A Longitudinal Study. *Journal of Social Policy* 38: 569-588.
King K and Gurian M. (2006) Teaching to the Minds of Boys. *Educational Leadership* 64: 56-58.
Lister R. (2004) *Poverty,* Cambridge, UK ; Malden, MA: Polity.
Magadi M and Middleton S. (2007) *Severe Child Poverty in the UK,* London: Save the Children.
Melhuish EC, Phan MB, Sylva K, et al. (2008) Effects of the home learning environment and preschool center experience upon literacy and numeracy development in early primary school. *Journal of Social Issues* 64: 95-114.
Merton RK. (1968) *Social theory and social structure / [by] Robert K. Merton*: New York : Free Press London : Collier-Macmillan.
Ragnarsdóttir BH, Bernburg JG and Ólafsdóttir S. (2013) The Global Financial Crisis and Individual Distress: The Role of Subjective Comparisons after the Collapse of the Icelandic Economy. *Sociology* 47: 755-775.
Ridge T. (2002) *Childhood poverty and social exclusion : from a child's perspective,* Bristol: Policy.
Ridge T. (2009) *Living with poverty : a review of the literature on children's and families' experiences of poverty,* London: Department for Work and Pensions.
Runciman WG. (1966) *Relative deprivation and social justice : a study of attitudes to social inequality in twentieth-century England / by W.G. Runciman*: London : Routledge & K. Paul, 1966.
Schoon I, Hope S, Ross A, et al. (2010) Family hardship and children's development: the early years. *Longitudinal and Life Course Studies* 1: 209-222.
Schoon I, Jones E, Cheng H, et al. (2012) Family hardship, family instability, and cognitive development. *Journal of Epidemiology & Community Health* 66: 716-722.
Shildrick T, Garthwaite K, MacDonald R, et al. (2013) *Poverty and insecurity [electronic resource] : life in low-pay, no-pay Britain / Tracy Shildrick, Robert MacDonald, Colin Webster and Kayleigh Garthwaite*: Bristol : Policy, 2013.
Smith HJ, Pettigrew TF, Pippin GM, et al. (2012) Relative Deprivation: A Theoretical and Meta-Analytic Review. *Personality & Social Psychology Review (Sage Publications Inc.)* 16: 203-232.
Starrin B, Aslund C and Nilsson KW. (2009) Financial Stress, Shaming Experiences and Psychosocial Ill-Health: Studies into the Finances-Shame Model. *Social Indicators Research* 91: 283-298.

Statacorp. (2013) *Stata 13 Structural Equation Modelling Reference Manual*, Texas: Stata Press.
Thomas C, Benzeval M and Stansfeld SA. (2005) Employment transitions and mental health: an analysis from the British household panel survey. *Journal of Epidemiology and Community Health* 59: 243-249.
Townsend P. (1979) *Poverty in the United Kingdom : a survey of household resources and standards of living*, Harmondsworth: Penguin.
Ware JE, Jr., Kosinski M and Keller SD. (1996) A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. *Medical Care* 34: 220-233.
Whelan CT and Maitre B. (2005) Vulnerability and multiple deprivation perspectives on economic exclusion in Europe: A latent class analysis. *European Societies* 7: 423-450.
Whelan CT and Maitre B. (2008) Social class variation in risk: a comparative analysis of the dynamics of economic vulnerability. *British Journal of Sociology* 59: 637-659.
Whitham G. (2012) *Child poverty in 2012: it shouldn't happen here*, Manchester: Save the Children.
Zick CD, Bryant WK and Osterbacka E. (2001) Mothers' employment, parental involvement, and the implications for intermediate child outcomes. *Social Science Research* 30: 25-49.

s